Claims

1. A method for controlling a transmission power level in a digital subscriber line, characterized in that transmission power levels of several digital subscriber lines are controlled simultaneously by the method comprising the steps of

- measuring crosstalk properties for each subscriber line in different situations;
- estimating crosstalk values from the measured crosstalk properties;
- organizing the crosstalk values of the different situations; and
- controlling the transmission power levels using the organized crosstalk values.

2. A method according to claim 1, characterized in that the method comprises a preliminary step before the measuring step for sending line specific test signals from a transmitting end to a receiving end in each line from which the crosstalk properties are measured.

3. A method according to claim 2, characterized in that the test signal of each subscriber line is sent sequentially in such a way that signal levels of the test signal are sequent specific and a combination of the parallel sequences of the digital subscriber lines is time sequence specific.

4. A method according to claim 2 or 3, characterized in that crosstalk properties are power levels of the test signals.

5. A method according to claim 2, 3, or 4 characterized in that when estimating the crosstalk values, information from the test signals are used.

6. A method according to any of claims 1 – 5, characterized in that matrices are used when organizing the crosstalk values.

7. A method according to any of claims 1 - 6, characterized in that SNR limitations are taken into account when controlling the transmission power levels.

8. A method according to claim 7, characterized in that the control of the transmission power levels are made equally so that the crosstalk is distributed in an even and fair manner to the subscriber lines.

9. A method according to claim 7, characterized in that the control of the transmission power levels are made so that the crosstalk is

distributed in such a way that more crosstalk can be accepted for lower service class lines.

10. A method according to any of claims 1 - 9, characterized in that the measurements are made off-line.

11. A method according to any of claims 1 - 9, characterized in that the measurements are made on-line.

12. A method according to any of claims 1 - 11, characterized in that the digital subscriber lines are VDSL lines.

13. A method according to any of claims 1 - 12, characterized in that the measurements are made in advance, before controlling the transmission powers of the lines.

14. A method according to any of claims 1 - 13, characterized in that the crosstalk values are crosstalk power level values.

15. A method according to any of claims 1 - 13, characterized in that the crosstalk values are crosstalk coefficient values.

16. A method according to any of claims 1 - 15, characterized in that the measurements are made from a downstream signal.

17. A method according to any of claims 1 - 15, characterized in that the measurements are made from an upstream signal.

18. An arrangement for controlling a transmission power level in a digital subscriber line, characterized in that the arrangement controls transmission power levels of several digital subscriber lines simultaneously, comprising:

- means for measuring crosstalk values for each subscriber line in different situations;
- means for organizing the crosstalk values of the different situations; and
- means for controlling the transmission power levels using the organized crosstalk values.

19. An arrangement according to claim 16, characterized in that the arrangement comprises means for sending line specific test signals from a transmitting end to a receiving end in each line wherein the measuring means exits.

20. An arrangement according to claim 19, characterized in that the test signal of each subscriber line is sent sequentially in such a way that signal levels of the test signal are sequent specific and a cornbina-

tion of the parallel sequences of the digital subscriber lines is time sequence specific.

21. An arrangement according to claim 19 or 20, characterized in that crosstalk properties are power levels of the test signals.

22. An arrangement according to claim 19, 20, or 21 characterized in that when estimating the crosstalk values, information from the test signals are used.

23. An arrangement according to any of claims 1 - 22, characterized in that matrices are used when organizing the crosstalk values.

24. An arrangement according to any of claims 18 - 23, characterized in that SNR limitations are taken into account when controlling the transmission power levels.

25. An arrangement according to claim 24, characterized in that the control of the transmission power levels is made equally so that the crosstalk is distributed in an even and fair manner to the subscriber lines.

26. An arrangement according to claim 24, characterized in that the control of the transmission power levels is made so that the crosstalk is distributed in such a way that more crosstalk can be accepted for lower service class lines.

27. An arrangement according to any of claims 18 - 26, characterized in that the measurements are made off-line.

28. An arrangement according to any of claims 18 - 26, characterized in that the measurements are made on-line.

29. An arrangement according to any of claims 18 - 28, characterized in that the digital subscriber lines are VDSL lines.

30. An arrangement according to any of claims 18 - 29, characterized in that the measurements are made in advance before controlling the transmission powers of the lines.

31. An arrangement according to any of claims 18 - 30, characterized in that the crosstalk values are crosstalk power level values.

32. An arrangement according to any of claims 18 - 30, characterized in that the crosstalk values are crosstalk coefficient values.

33. A method according to any of claims 18 - 32, characterized in that the measurements are made from a downstream signal.

34. A method according to any of claims 18 - 32, characterized in that the measurements are made from an upstream signal.